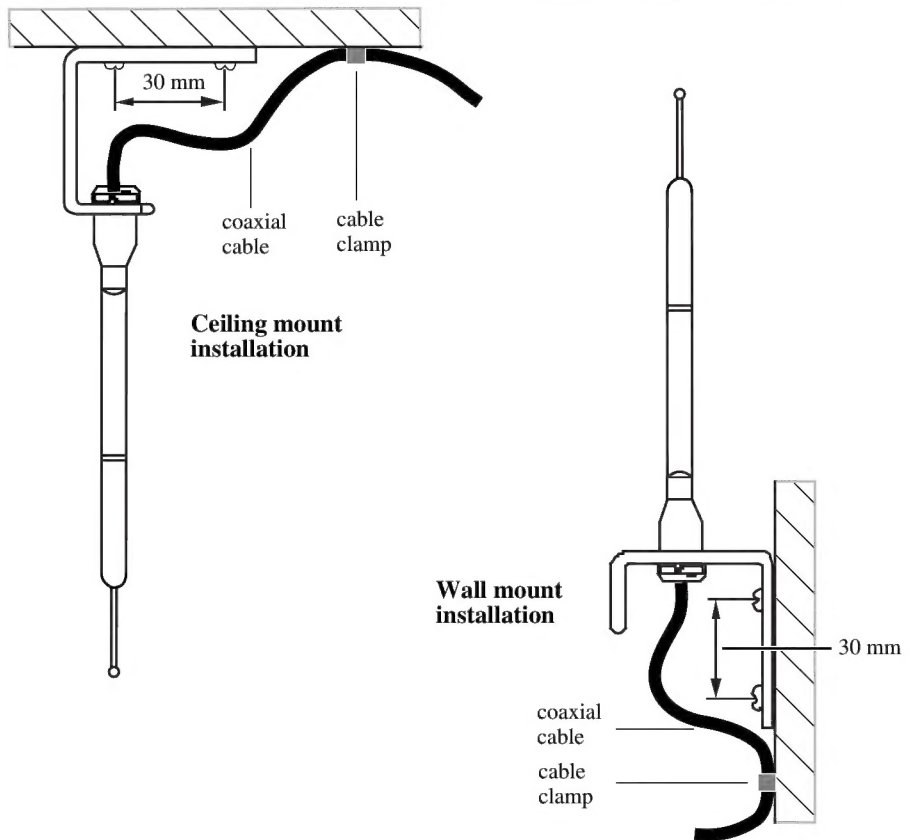


Figure 18: Installing an indoor omnidirectional external antenna

1. Insert the antenna in the bracket so that the antenna is vertical.
2. Mount the bracket to the wall or ceiling using two screws.
3. To prevent undue cable stress on the coaxial cable, secure it to the mounting surface with a clamp.
4. Connect the external antenna to the appropriate Base Station radio.

Note: The length of the coaxial cable must not exceed 10 m.

Installing an outdoor omnidirectional external antenna

- Locate the antenna on the external wall of the building.

Note: The antenna must be mounted on a vertical surface.

- Keep the outdoor omnidirectional external antenna as close as possible to the Base Station serving it (the Base Station must be inside). The recommended mounting height is 4 to 5 m above ground level.
- Always install a lightning surge arrestor between an outdoor omnidirectional antenna and a Base Station.

Note: The connector on the outdoor omnidirectional antenna is a TNC female connector, so you need an adapter to connect it to the standard BNC coaxial cables needed for the lightning surge arrestor and the Base Station. You can also use a coaxial cable with a TNC male connector on one end and BNC male connector on the other end.

ATTENTION!

Fit the lightning protection to the antenna if appropriate.

See “Installing a lightning surge arrestor.”

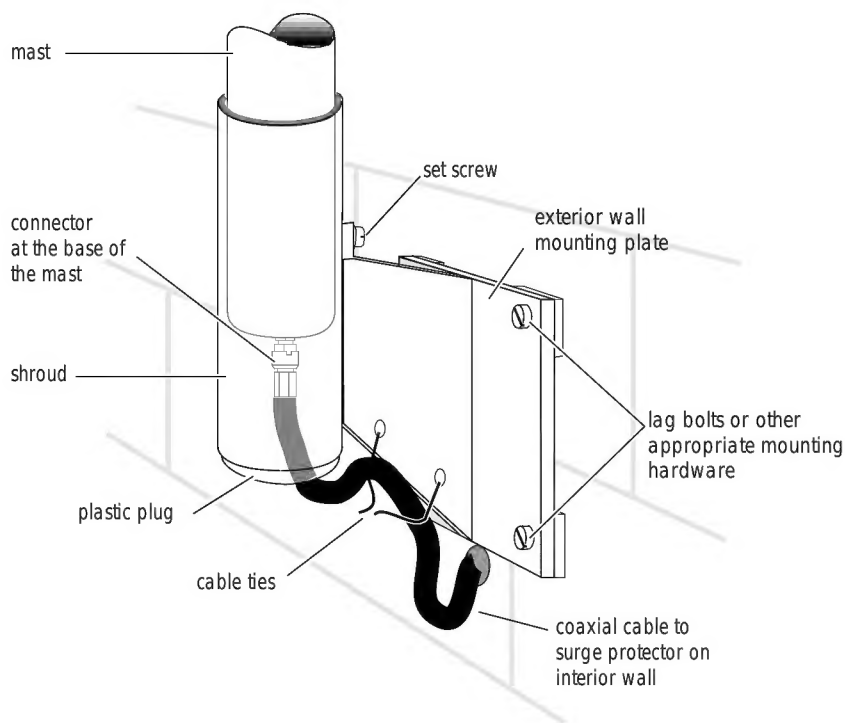
ATTENTION!

Do not install the external antenna or the lightning surge arrestor during an electrical storm.

Always turn off the Base Station power before connecting the coaxial cable of an outdoor external antenna.

Always install the lightning surge arrestor as close as possible to the cable entry point into the building.

Connect the lightning surge arrestor to ground before connecting the coaxial cable

Figure 19: Installing the outdoor omnidirectional external antenna

1. Screw the antenna mounting plate vertically to the exterior wall of the building with lag bolts or other appropriate hardware as shown in Figure 19.
2. Feed one end of the coaxial cable up through the bottom of the antenna shroud and attach the BNC connector to the base of the mast.
3. Slide the mast down into the shroud until it fits.
4. Rotate the mast until the threaded hole in the base of the mast is aligned with the set screw hole in the shroud, and then tighten the set screw.
5. Route the coaxial cable along the bottom edge of the plate between the shroud and the wall plate and tie the cable up.

Note: The total length of the coaxial cables from the outdoor external antenna to the Base Station must not exceed 10 m.

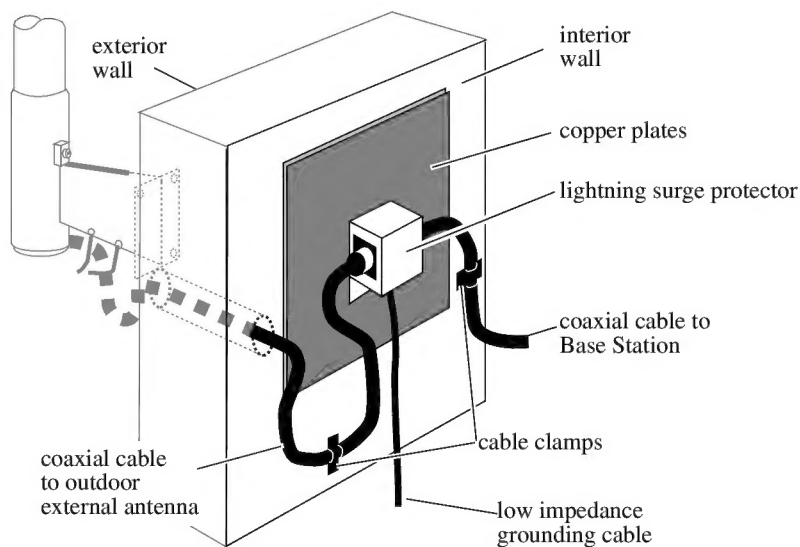
6. Insert the protective plastic plug into the base of the shroud.
7. Feed the coaxial cable through the wall to the lightning surge arrestor on the interior wall.

Installing the lightning surge arrestor

Install the lightning surge arrestor for the outdoor omnidirectional antenna to protect it from electrical surges. The recommended lightning surge arrestor is part number A0382082. Refer to the manufacturer's installation instructions for more details on its installation.

1. Mount the lightning surge arrestor on the interior wall, shown in Figure 20, as close as possible to the entry point of the coaxial cable from the outdoor external antenna. Follow the installation instructions that come with the lightning surge arrestor.

Figure 20: Installing the lightning surge arrestor



2. Before you connect the ground lead to the lightning surge arrestor, attach it to an approved ground. The recommended wire gauge is 6 AWG (4 mm). Connect the ground lead to the building ground. *Do not connect to a ground rod or series of ground rods.* If you cannot connect the

ground lead to the building ground, connect it to the building's steel (the connection should be no more than two to three meters. You can also connect the ground lead to the 120 V ac conduit (which is connected to the building ground), but this is *not* a preferred solution.

3. Route and connect the coaxial cable from the outdoor external antenna to the lightning surge arrestor.
4. Route and connect the coaxial cable from the lightning surge arrestor to the appropriate Base Station BNC connector.

Note: The total length of the coaxial cables from the outdoor external antenna to the Base Station must not exceed 10 m.

Installing a Companion Administration Terminal

The Companion Administration Terminal is connected to the first Companion Meridian Controller card (CMCC) Time Compression Multiplexing (TCM) port. It cannot make or receive telephone calls, but is used to program the Meridian Companion system and the portable telephones.

Note: If you plan to use Companion Manager instead of or in addition to an Administration Terminal, refer to *Companion Manager Installation and Operations Guide*.

Installing the Administration Terminal

1. Remove the Administration Terminal from its box.
For wall mounting instructions, see “Mounting the Administration Terminal on a wall” on page 42.
2. Do not attach the receiver. (You may want to discard it because the Administration Terminal cannot be used as a telephone.)
3. Connect one end of the telephone cord to the back of the Administration Terminal and the other end to the port on the distribution block that corresponds to the first port on the CMCC.
4. Replace the four buttons below the display with the navigation button caps provided with the set.

Mounting the Administration Terminal on a wall

1. Remove the wall mounting bracket from the base of the Administration Terminal. Grip the base, and with both thumbs, push up on the mounting bracket to pop it out.
2. Use a screwdriver or similar tool to remove the center knock-out panel from the base.
3. With the thin end up, hold the mounting bracket against the wall and mark the positions of the three fixing screws.
4. Route the line cord along the guide in the base and through the knocked out hole.
5. Screw the mounting bracket to the wall.
6. Connect the line cord to the jack in the base of the Administration Terminal.
7. Tuck the spare cable into the base.
8. Plug the Administration Terminal into the first port on the CMCC.
9. Snap the Administration Terminal onto the base.

Installing Companion Manager

You can use Companion Manager instead of or in addition to the Administration Terminal. For installation instructions, refer to *Companion Manager Installation and Operations Guide*. If you are running Companion Diagnostic Software (CDS) or Companion Manager on a PC, a Remote Access Device (RAD) must be installed.

Installing the PC Interface Card

The PCI card provides a physical connection between the Companion Controller and your PC. The PCI card communicates with the PC through an Input/Output port. This I/O port is a 16 byte area in PC memory between addresses 200 and 3F0(hex). The starting address of the I/O port is called the I/O base address.

The I/O base address and IRQ settings are in file `waccess.ini`, which is located in your windows root directory (usually `c:\windows`). On startup,

PCconfig backs up the existing `waccess.ini` file by renaming it `waccess.old`. If you have complex `waccess.ini` file contents (for example, TAPI or ACCESS), you should manually back up the file before running PCconfig.

The configuration tool verifies that the I/O base address and the IRQ selected for the PCI card are properly configured, and that the card is properly connected to the Controller.

Note: The configuration tool runs only on Windows 95® and Windows 3.1®.

Setting the base address dip switches

The I/O base address is set using the five dip switches on the PCI card. You must select a setting that does not conflict with other hardware connected to your PC. If you are running Windows 95, you can view the I/O base address settings:

1. Press START and select Settings/Control Panel.
2. Double-click on the System icon to open the System Properties.
3. Select the Device Manager tab and press the Properties button.
4. Select the Input/output radio button.
5. Scroll through the list and ensure there is no conflict with the I/O addresses. Change the I/O base address settings on the card when there is a conflict.

You should initially set the dip switches to correspond to the I/O base address of 280h [ON,OFF,ON,ON,ON].

If you are running Windows 3.1 and you cannot view the I/O address settings, the best range of addresses is 230h to 300h.

Do not use 2F0h and 3F0h addresses. PC COMM1 AND COMM2 serial ports use addresses 2F8h and 3F8h.

On older PCI cards, the default dip switch settings correspond to I/O base address 300h. Address 300h may not work when you are running Windows 95.

Table 5: Dip switch settings

I/O address	1	2	3	4	5
200	ON	ON	ON	ON	ON
210	ON	ON	ON	ON	OFF
220	ON	ON	ON	OFF	ON
230	ON	ON	ON	OFF	OFF
240	ON	ON	OFF	ON	ON
250	ON	ON	OFF	ON	OFF
260	ON	ON	OFF	OFF	ON
270	ON	ON	OFF	OFF	OFF
280	ON	OFF	ON	ON	ON
290	ON	OFF	ON	ON	OFF
2A0	ON	OFF	ON	OFF	ON
2B0	ON	OFF	ON	OFF	OFF
2C0	ON	OFF	OFF	ON	ON
2D0	ON	OFF	OFF	ON	OFF
2E0	ON	OFF	OFF	OFF	ON
2F0	ON	OFF	OFF	OFF	OFF
300	OFF	Same as 200s section			
.	OFF				
.					
.					
3F0	OFF				

Installing the PCI card

ATTENTION!

Do not use a pencil to change the switch settings. Graphite deposits are electrically conductive and can cause a short circuit in the switch.

1. Set the five dip switches for the I/O base address you are using.
2. Power off the PC and remove the cover.
3. Insert the card in a free expansion slot.
4. Replace the cover.
5. Run a Teledapt cable from the card's LINE jack to the Controller.
6. Power up the PC.

Setting the hardware interrupt

The PCI card requires a hardware interrupt (IRQ) in the range of 3 to 7 that is not in use by another device on your PC.

Table 6: PC hardware and IRQ settings

IRQ	Use	
3	Serial port COMM2	may be available
4	Serial port COMM1	may be available
5	Sound card, LAN, ...	often available
6	Floppy drive controller	unavailable
7	Printer LPT1	often available

The configuration tool shows you the available IRQ settings, and allows you to choose the IRQ setting for the PCI card.

Note: Ensure that an IRQ setting is available before selecting it. If equipment connected to your PC is turned off, is not currently active, or if a driver is not running, the IRQ setting may appear as available.

For example, you may select IRQ7 for the PCI card, but a printer may be using IRQ7. You may not be able to print a file when the PCI application is active.

If an IRQ is not available in the range 3 to 7, you may be able to reconfigure equipment to use a higher IRQ setting. If you are running Windows 95, you can view the equipment and the IRQ setting:

1. Press START and select Settings/Control Panel.
2. Double-click on the System icon to open the System Properties.
3. Select the Device Manager tab and press the Properties button.
4. Select the Interrupt request radio button.

Note: Older equipment may not show up in this list.

For more information on installing the PCI card, refer to PCconfig on-line help.

Installing a Remote Access Device

Refer to *Companion Remote Access Device Installation Guide*.

Remote Access Device configuration options

The configuration in Figure 21 permits local or remote access to the Meridian Companion system.

Figure 21: Local or remote access to the Meridian Companion system

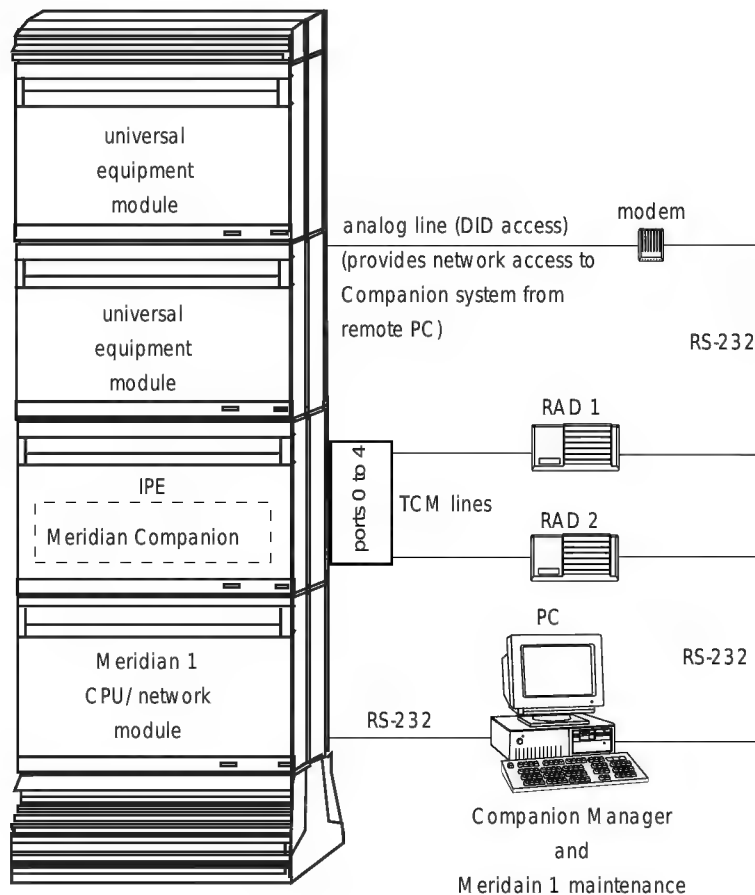


Figure 22 shows how to configure the PC when the PC handles Meridian 1 maintenance as well as Meridian Companion diagnostic software. The PC connects directly to the Meridian 1 system and connects to Companion through the RAD. In this configuration, the PC must have three serial ports to support the RAD, the mouse, and the Meridian 1 CPU.

Figure 22: Local access to a shared Meridian Companion PC

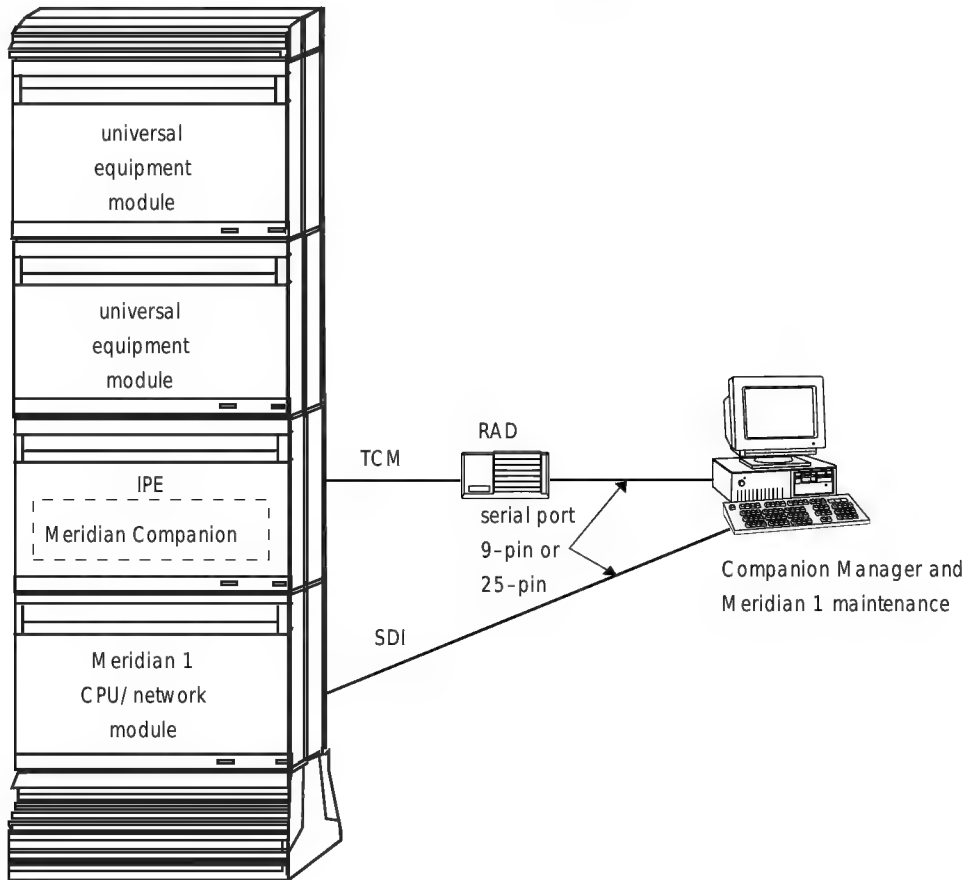
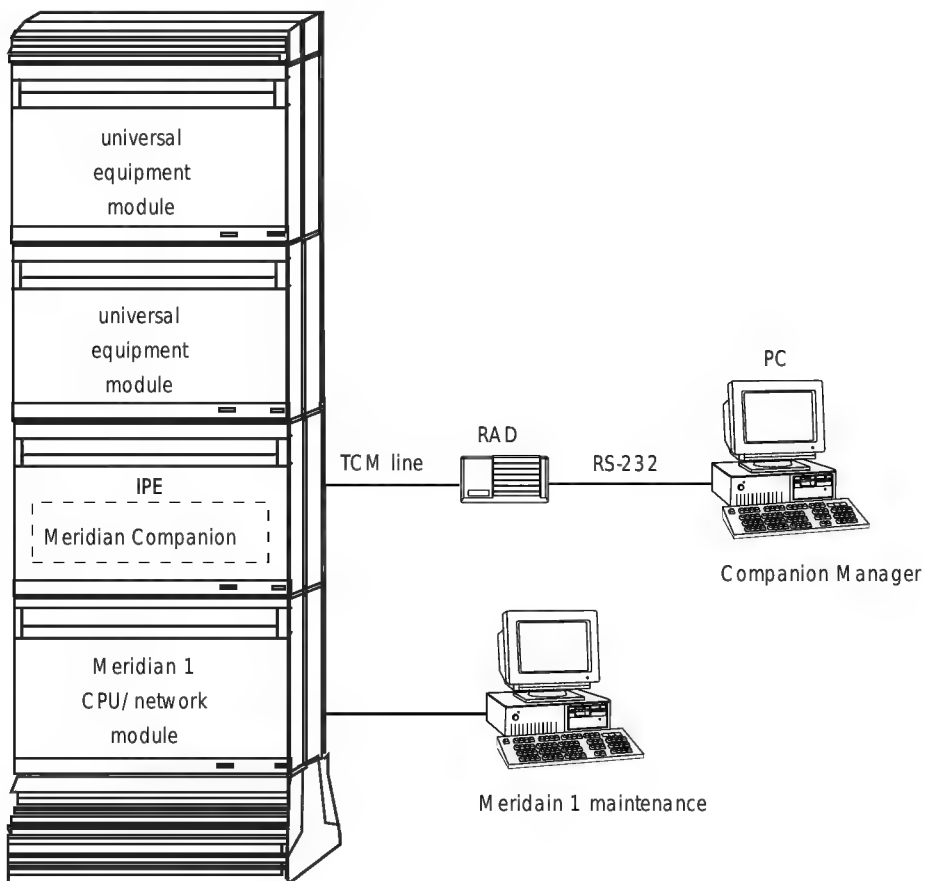


Figure 23 shows local access to Meridian Companion using a PC dedicated to Meridian Companion. In this case, the PC running the diagnostic software connects directly to the RAD.

Figure 23: Local access to a dedicated Meridian Companion PC



Wiring the Time Compression Multiplexing lines

The Base Stations, the Administration Terminal, and the RAD connect to the Meridian Companion cards using twisted pairs called Time Compression Multiplexing (TCM) lines.

The 16 TCM lines on the CMCC or Companion Meridian radio line cards (CMRC) are available at the backplane on tip and ring pairs.

Planning the IPE and CE/PE module wiring

Tables 7 through 13 show the configuration for IPE modules and IPE slots on CE/PE modules. Refer to Meridian 1 system installation procedures for more information.

Table 7: NT8D11 CE/PE Module—Line card pair-terminations with backplane cable expansion

Pair	Pins	Pair color	I/O panel connector cables/slots										Unit 24/card
			A	B	C	D	E	F	G	H	K	L	
			0	1	2	3	4	5	6	7	8	9	
1T / 1R	26 / 1	W-BL / BL-W											0
2T / 2R	27 / 2	W-O / O-W											1
3T / 3R	28 / 3	W-G / G-W											2
4T / 4R	29 / 4	W-BR / BR-W											3
5T / 5R	30 / 5	W-S / S-W											4
6T / 6R	31 / 6	R-BL / BL-R											5
7T / 7R	32 / 7	R-O / O-R											6
8T / 8R	33 / 8	R-G / G-R											7
9T / 9R	34 / 9	R-BR / BR-R											8
10T / 10R	35 / 10	R-S / S-R											9
11T / 11R	36 / 11	BK-BL / BL-BK											10
12T / 12R	37 / 12	BK-O / O-BK											11
13T / 13R	38 / 13	BK-G / G-BK											12
14T / 14R	39 / 14	BK-BR / BR-BK											13
15T / 15R	40 / 15	BK-S / S-BK											14
16T / 16R	41 / 16	Y-BL / BL-Y											15
17T / 17R	42 / 17	Y-O / O-Y											16
18T / 18R	43 / 18	Y-G / G-Y											17
19T / 19R	44 / 19	Y-BR / BR-Y											18
20T / 20R	45 / 20	Y-S / S-Y											19
21T / 21R	46 / 21	V-BL / BL-V											20
22T / 22R	47 / 22	V-O / O-V											21
23T / 23R	48 / 23	V-G / G-V											22
24T / 24R	49 / 24	V-BR / BR-V											23
25T / 25R	50 / 25	V-S / S-V											Spare

Table 8: NTAk 11 and NTAk 12 series main and expansion cabinet wiring

Pair	Pins	Pair color	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	Unit 24/ card	
			J11	J12	J13	J14	J15	J16	J17	J18	J19	J20		
			slot											
			1/ 11/21	2/ 12/22	3/ 13/23	4/ 14/24	5/ 15/25	6/ 16/26	7/ 17/27	8/ 18/28	9/ 19/29	10/ 20/30		
1T / 1R	26 / 1	W-BL / BL-W											0	
2T / 2R	27 / 2	W-O / O-W											1	
3T / 3R	28 / 3	W-G / G-W											2	
4T / 4R	29 / 4	W-BR / BR-W											3	
5T / 5R	30 / 5	W-S / S-W											4	
6T / 6R	31 / 6	R-BL / BL-R											5	
7T / 7R	32 / 7	R-O / O-R											6	
8T / 8R	33 / 8	R-G / G-R											7	
9T / 9R	34 / 9	R-BR / BR-R											8	
10T / 10R	35 / 10	R-S / S-R											9	
11T / 11R	36 / 11	BK-BL / BL-BK											10	
12T / 12R	37 / 12	BK-O / O-BK											11	
13T / 13R	38 / 13	BK-G / G-BK											12	
14T / 14R	39 / 14	BK-BR / BR-BK											13	
15T / 15R	40 / 15	BK-S / S-BK											14	
16T / 16R	41 / 16	Y-BL / BL-Y											15	
17T / 17R	42 / 17	Y-O / O-Y											16	
18T / 18R	43 / 18	Y-G / G-Y											17	
19T / 19R	44 / 19	Y-BR / BR-Y											18	
20T / 20R	45 / 20	Y-S / S-Y											19	
21T / 21R	46 / 21	V-BL / BL-V											20	
22T / 22R	47 / 22	V-O / O-V											21	
23T / 23R	48 / 23	V-G / G-V											22	
24T / 24R	49 / 24	V-BR / BR-V											23	
25T / 25R	50 / 25	V-S / S-V											Spare	

Table 9: NT8D37 IPE Module—Line card pair-terminations with backplane cable expansion, segments 0 and 1

Pair	Pins	Pair color	I/O panel connector cables/slots								Unit 24/card
			A	B	C	D	E	F	G	H	
			0	1	2	3	4	5	6	7	
1T / 1R	26 / 1	W-BL / BL-W									0
2T / 2R	27 / 2	W-O / O-W									1
3T / 3R	28 / 3	W-G / G-W									2
4T / 4R	29 / 4	W-BR / BR-W									3
5T / 5R	30 / 5	W-S / S-W									4
6T / 6R	31 / 6	R-BL / BL-R									5
7T / 7R	32 / 7	R-O / O-R									6
8T / 8R	33 / 8	R-G / G-R									7
9T / 9R	34 / 9	R-BR / BR-R									8
10T / 10R	35 / 10	R-S / S-R									9
11T / 11R	36 / 11	BK-BL / BL-BK									10
12T / 12R	37 / 12	BK-O / O-BK									11
13T / 13R	38 / 13	BK-G / G-BK									12
14T / 14R	39 / 14	BK-BR / BR-BK									13
15T / 15R	40 / 15	BK-S / S-BK									14
16T / 16R	41 / 16	Y-BL / BL-Y									15
17T / 17R	42 / 17	Y-O / O-Y									16
18T / 18R	43 / 18	Y-G / G-Y									17
19T / 19R	44 / 19	Y-BR / BR-Y									18
20T / 20R	45 / 20	Y-S / S-Y									19
21T / 21R	46 / 21	V-BL / BL-V									20
22T / 22R	47 / 22	V-O / O-V									21
23T / 23R	48 / 23	V-G / G-V									22
24T / 24R	49 / 24	V-BR / BR-V									23
25T / 25R	50 / 25	V-S / S-V									Spare

Table 10: NT8D11 CE/PE Module—Line card pair-terminations for connectors A, B, E, H (standard)

Pair	Pins	Pair color	I/O panel connectors/slot				Unit 16/card
			A	B	E	H	
			slot 0	slot 1	slot 4	slot 7	
1T / 1R	26 / 1	W-BL / BL-W					0
2T / 2R	27 / 2	W-O / O-W					1
3T / 3R	28 / 3	W-G / G-W					2
4T / 4R	29 / 4	W-BR / BR-W					3
5T / 5R	30 / 5	W-S / S-W					4
6T / 6R	31 / 6	R-BL / BL-R					5
7T / 7R	32 / 7	R-O / O-R					6
8T / 8R	33 / 8	R-G / G-R					7
9T / 9R	34 / 9	R-BR / BR-R					8
10T / 10R	35 / 10	R-S / S-R					9
11T / 11R	36 / 11	BK-BL / BL-BK					10
12T / 12R	37 / 12	BK-O / O-BK					11
13T / 13R	38 / 13	BK-G / G-BK					12
14T / 14R	39 / 14	BK-BR / BR-BK					13
15T / 15R	40 / 15	BK-S / S-BK					14
16T / 16R	41 / 16	Y-BL / BL-Y					15
				slot 2	slot 5	slot 8	
17T / 17R	42 / 17	Y-O / O-Y					0
18T / 18R	43 / 18	Y-G / G-Y					1
19T / 19R	44 / 19	Y-BR / BR-Y					2
20T / 20R	45 / 20	Y-S / S-Y					3
21T / 21R	46 / 21	V-BL / BL-V					4
22T / 22R	47 / 22	V-O / O-V					5
23T / 23R	48 / 23	V-G / G-V					6
24T / 24R	49 / 24	V-BR / BR-V					7
25T / 25R	50 / 25	V-S / S-V					Spare

Table 11: NT8D11 CE/PE Module—Line card pair-terminations for connectors C, F, K (standard)

Pair	Pins	Pair color	I/O panel connector/slot			Unit 16 per card
			C	F	K	
			slot 2	slot 5	slot 8	
1T / 1R	26 / 1	W-BL / BL-W				8
2T / 2R	27 / 2	W-O / O-W				9
3T / 3R	28 / 3	W-G / G-W				10
4T / 4R	29 / 4	W-BR / BR-W				11
5T / 5R	30 / 5	W-S / S-W				12
6T / 6R	31 / 6	R-BL / BL-R				13
7T / 7R	32 / 7	R-O / O-R				14
8T / 8R	33 / 8	R-G / G-R				15
			slot 3	slot 6	slot 9	
9T / 9R	34 / 9	R-BR / BR-R				0
10T / 10R	35 / 10	R-S / S-R				1
11T / 11R	36 / 11	BK-BL / BL-BK				2
12T / 12R	37 / 12	BK-O / O-BK				3
13T / 13R	38 / 13	BK-G / G-BK				4
14T / 14R	39 / 14	BK-BR / BR-BK				5
15T / 15R	40 / 15	BK-S / S-BK				6
16T / 16R	41 / 16	Y-BL / BL-Y				7
17T / 17R	42 / 17	Y-O / O-Y				8
18T / 18R	43 / 18	Y-G / G-Y				9
19T / 19R	44 / 19	Y-BR / BR-Y				10
20T / 20R	45 / 20	Y-S / S-Y				11
21T / 21R	46 / 21	V-BL / BL-V				12
22T / 22R	47 / 22	V-O / O-V				13
23T / 23R	48 / 23	V-G / G-V				14
24T / 24R	49 / 24	V-BR / BR-V				15
25T / 25R	50 / 25	V-S / S-V				Spare

Table 12: NT8D37 IPE Module—Line card pair-terminations for connectors B, F, L, S

Pair	Pins	Pair color	I/O panel connectors				Unit 16/card
			B	F	L	S	
			slot 1	slot 5	slot 9	slot 13	
1T / 1R	26 / 1	W-BL / BL-W					0
2T / 2R	27 / 2	W-O / O-W					1
3T / 3R	28 / 3	W-G / G-W					2
4T / 4R	29 / 4	W-BR / BR-W					3
5T / 5R	30 / 5	W-S / S-W					4
6T / 6R	31 / 6	R-BL / BL-R					5
7T / 7R	32 / 7	R-O / O-R					6
8T / 8R	33 / 8	R-G / G-R					7
9T / 9R	34 / 9	R-BR / BR-R					8
10T / 10R	35 / 10	R-S / S-R					9
11T / 11R	36 / 11	BK-BL / BL-BK					10
12T / 12R	37 / 12	BK-O / O-BK					11
13T / 13R	38 / 13	BK-G / G-BK					12
14T / 14R	39 / 14	BK-BR / BR-BK					13
15T / 15R	40 / 15	BK-S / S-BK					14
16T / 16R	41 / 16	Y-BL / BL-Y					15
			slot 2	slot 6	slot 10	slot 14	
17T / 17R	42 / 17	Y-O / O-Y					0
18T / 18R	43 / 18	Y-G / G-Y					1
19T / 19R	44 / 19	Y-BR / BR-Y					2
20T / 20R	45 / 20	Y-S / S-Y					3
21T / 21R	46 / 21	V-BL / BL-V					4
22T / 22R	47 / 22	V-O / O-V					5
23T / 23R	48 / 23	V-G / G-V					6
24T / 24R	49 / 24	V-BR / BR-V					7
25T / 25R	50 / 25	V-S / S-V					Spare

Table 13: NT8D37 IPE Module—Line card pair-terminations for connectors C, G, M, T

Pair	Pins	Pair color	I/O panel connectors				Unit 16/card
			C	G	M	T	
			slot 2	slot 6	slot 10	slot 14	
1T / 1R	26 / 1	W-BL / BL-W					8
2T / 2R	27 / 2	W-O / O-W					9
3T / 3R	28 / 3	W-G / G-W					10
4T / 4R	29 / 4	W-BR / BR-W					11
5T / 5R	30 / 5	W-S / S-W					12
6T / 6R	31 / 6	R-BL / BL-R					13
7T / 7R	32 / 7	R-O / O-R					14
8T / 8R	33 / 8	R-G / G-R					15
			slot 3	slot 7	slot 11	slot 15	
9T / 9R	34 / 9	R-BR / BR-R					0
10T / 10R	35 / 10	R-S / S-R					1
11T / 11R	36 / 11	BK-BL / BL-BK					2
12T / 12R	37 / 12	BK-O / O-BK					3
13T / 13R	38 / 13	BK-G / G-BK					4
14T / 14R	39 / 14	BK-BR / BR-BK					5
15T / 15R	40 / 15	BK-S / S-BK					6
16T / 16R	41 / 16	Y-BL / BL-Y					7
17T / 17R	42 / 17	Y-O / O-Y					8
18T / 18R	43 / 18	Y-G / G-Y					9
19T / 19R	44 / 19	Y-BR / BR-Y					10
20T / 20R	45 / 20	Y-S / S-Y					11
21T / 21R	46 / 21	V-BL / BL-V					12
22T / 22R	47 / 22	V-O / O-V					13
23T / 23R	48 / 23	V-G / G-V					14
24T / 24R	49 / 24	V-BR / BR-V					15
25T / 25R	50 / 25	V-S / S-V					Spare

Installing Meridian Companion cards



STATIC!

Wear a grounding strap.

Do not touch the printed circuit board or the connector. The printed circuit board is a static-sensitive device.

Meridian Companion includes four different types of cards:

- a required Companion Meridian Controller card (CMCC)
- optional Companion Meridian radio line cards (CMRCs)
- optional Companion Meridian line cards (CMLCs)
- a required ROM feature card, which is a daughter board of the Controller card (CMCC)

If a new IPE module is required, make sure that it has been installed and powered up before installing the Meridian Companion system.

Keep these points in mind when installing cards:

- The cards must all reside on a single IPE module.
- The cards must be grouped in adjacent slots on the IPE module (or IPE slots on the CE/PE module).
- The CMCC can be installed anywhere on the IPE module, but it must be located to the left of the other Companion cards.
- Any Companion expansion cards must be installed in any order to the right of the CMCC, and must be installed before installing the CMCC.
- The cards should be installed and connected from right to left. The CMCC is the last card to be installed and connected.

- When installing cards into an Option 11 core or expansion cabinet, note the actual slot location of the CMCC. You will need to verify this location when programming the system (see “CMCC slot” on page 78 for more information).

ATTENTION!

If the card slot address requires an adjustment and you do not make this adjustment, the WTN addresses will not be consistent with the M1 addresses.

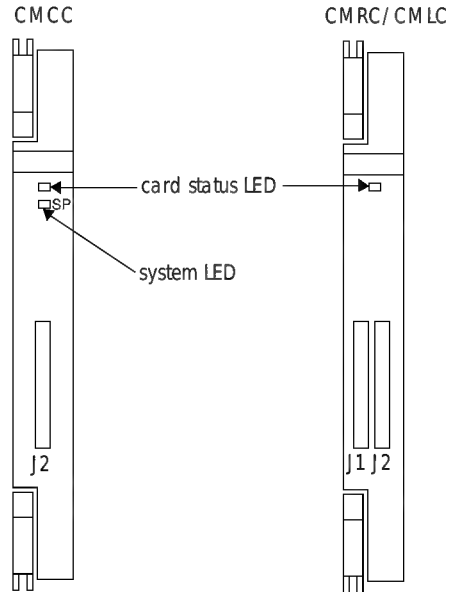
Faceplate 60-wire cabling connects the CMCC to the other cards in a daisychain. A long faceplate cable (bypass faceplate cable harness) is available to connect cards across the NT8D01 Controller card if necessary.

Normal LED behavior upon installation

All Companion cards are equipped with a card status LED. The CMCC is also equipped with a system LED, labelled SP (system processor).

The card LED is the top LED on the CMCC and the only LED on the expansion cards. It is not labeled. If the LED is on, the card is out of service and can be safely removed. If the LED is off, the card is in service and should not be removed.

The difference between a regular line card and a Meridian Companion card is that the Meridian Companion card must be disabled from *both the Meridian 1 and the Meridian Companion sides* before the LED goes from *off* to *on*. Conversely, for a completely disabled card (LED is on) the LED goes off when the card is enabled from either side.

Figure 24: Card LED locations

When the card is first installed or powered up, the LED goes on for approximately 3 seconds, then flashes three times to indicate that the firmware self-test sequence is operating properly. If the LED does not follow this pattern, the card is defective and must be replaced.

The system LED is the bottom LED on the CMCC. It indicates the status of the Controller software. Its state affects the state of all other cards. When the CMCC is first installed, the system LED does the following:

- Does not flash but remains on for approximately 5 seconds.
- Goes off for approximately 5 seconds.
- Begins flashing to indicate that connected cards and TCM devices are initializing.

If this normal pattern (on/off/flashing) does not occur, refer to “Troubleshooting a remote power interconnect unit” on page 160. LED behavior after initialization depends on whether the CMCC has been programmed and whether expansion cards have been connected, as described in Table 30: Card LED behavior, on page 157.

Placing cards

Figure 25 shows how cards appear on the IPE Module in Option 21 through Option 81 systems.

Figure 25: IPE module—Sample placement of cards in Meridian Companion system

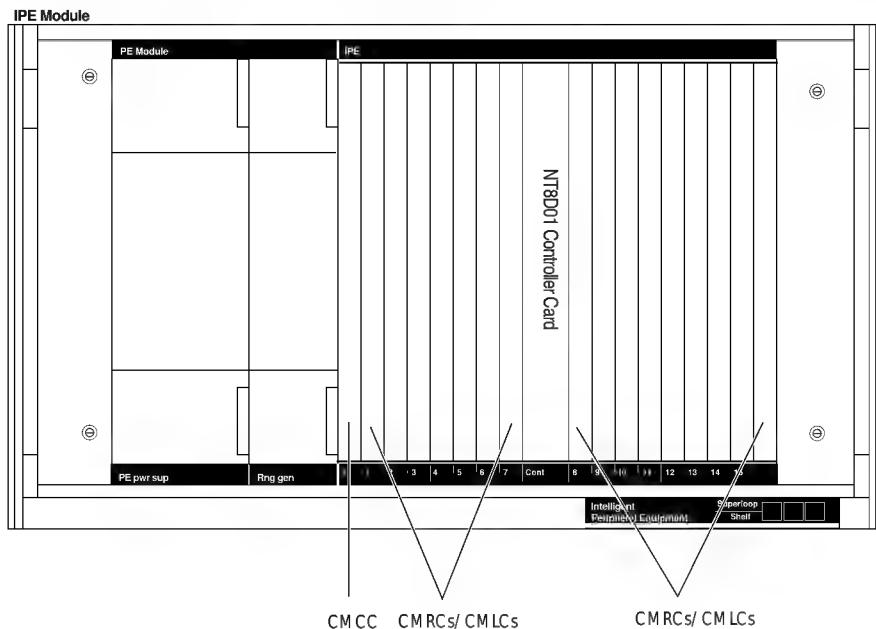


Figure 26 shows the card configuration on a CE/PE module. The illustration lists other cards that can be located on the CE/PE module.

Figure 26: CE/PE module—Sample placement of cards in Meridian Companion system

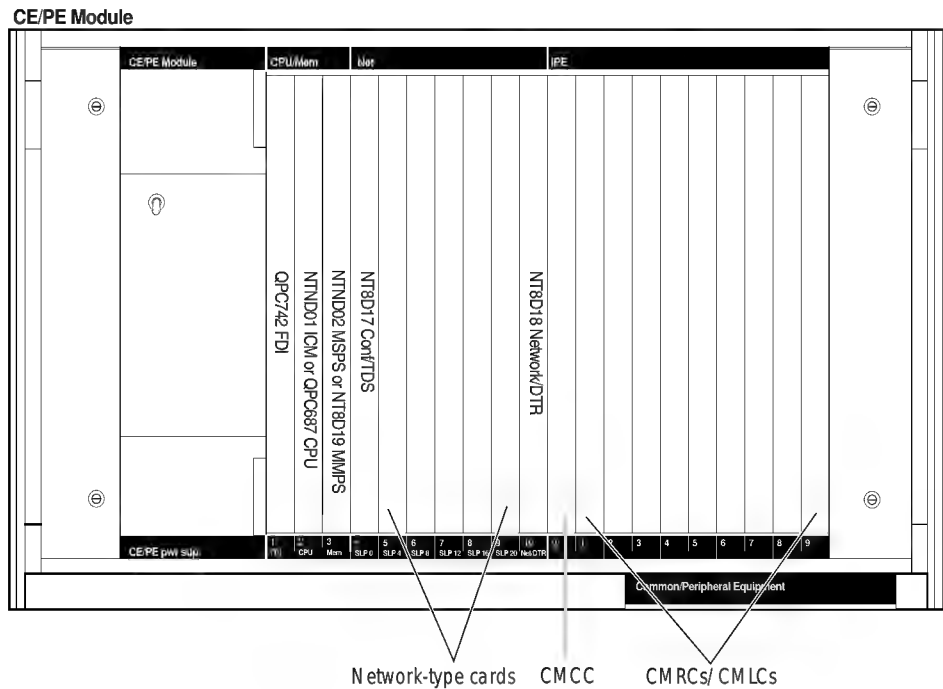


Figure 27 and Figure 28 show card placement in Option 11 systems. The cards can be placed in slots 1 through 9 on the system shelf, as shown in Figure 27, or in an expansion cabinet, as shown in Figure 28. Option 11 systems that are not using Meridian Mail can also install a Companion card in slot 10. The illustrations indicate the kinds of cards that can be included in the Option 11 system.

Figure 27: Option 11 Meridian Companion card configuration—Main cabinet

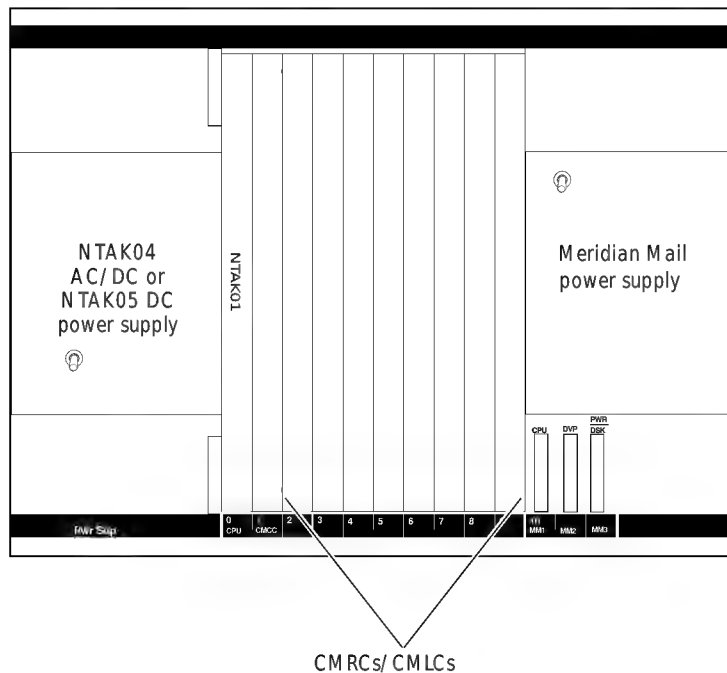
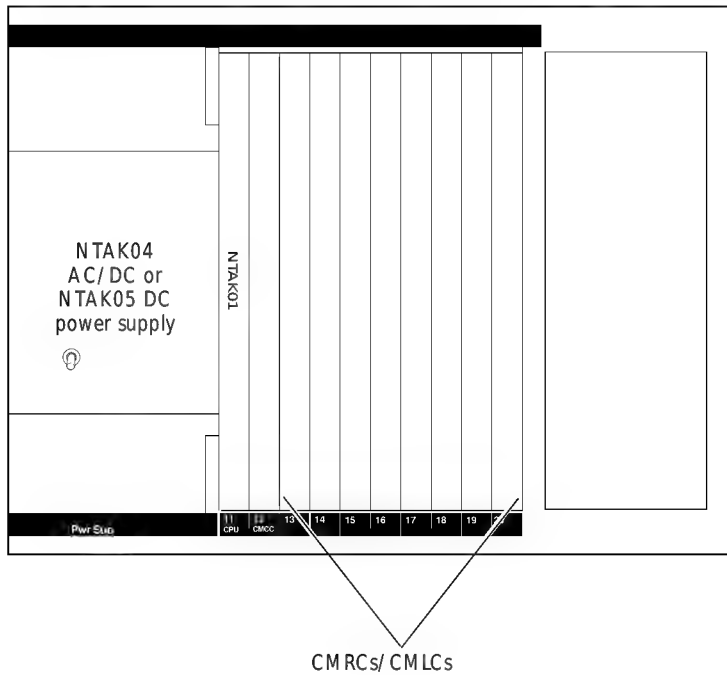


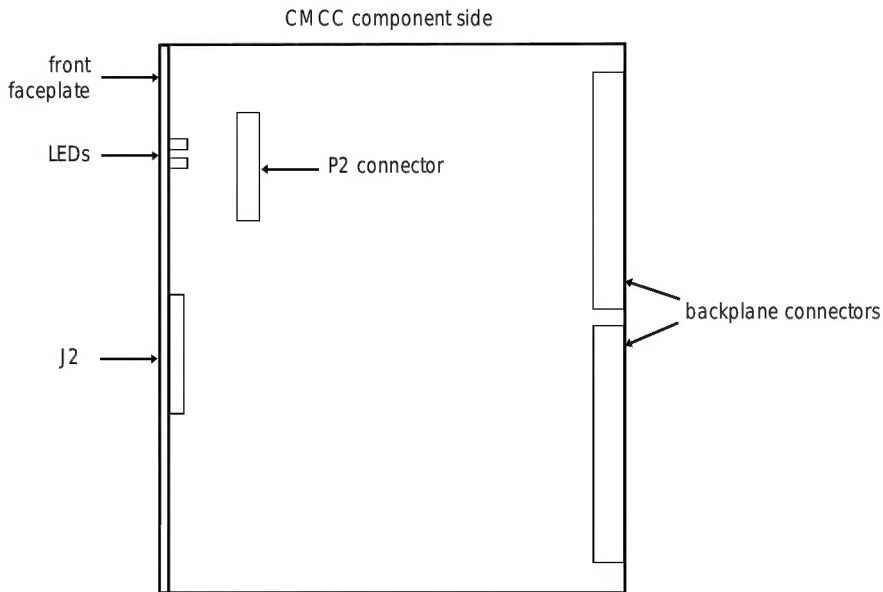
Figure 28: Option 11 Meridian Companion card configuration—Expansion cabinet



Installing cards

1. Install all expansion cards for your system first. If you are not using expansion cards, proceed to step 3. Verify appropriate card LED behavior, as described in “Normal LED behavior upon installation” on page 59.
2. Connect each card with the adjacent cards, moving from *right to left*, using the interboard faceplate cable harness and the bypass faceplate cable harness, for IPE shelves only. (Both are 60-wire faceplate cables. The bypass cable is an extra-long cable used on Option 51 through Option 81 IPE shelves to connect cards across the NT8D01 Controller Card.)
 - a. Make sure the red wire is at the bottom of the cable. (The cable is polarized to guard against incorrect insertion.)
 - b. Insert the J2 (right) cable plug into connector J1 (left) on the card on the far right.
 - c. Insert the J1 (left) cable plug into connector J2 (right) of the next card.
 - d. Insert the J2 plug of the next cable harness into connector J1 of the next card.
 - e. Use a blunt object to press the cable plug and then close the connector latches securely. Do not use the latches to press the cable plug.
 - f. Continue inserting cables from right to left, joining the J1 plug of one line card with the J2 connector of the next line card, until the daisychain reaches the CMCC on the left most card.
 - g. Leave the last faceplate cable hanging for CMCC installation.
3. Insert the two plastic ROM card standoffs into the CMCC holes that are aligned with the ROM card holes.
4. Slide the ROM card into the right-angled connector mate P2 on the CMCC.

Figure 29: P2 plug location



5. Fasten the ROM card securely to the stand-offs.
6. Install the CMCC on the IPE module. The CMCC must be located to the left of any CMRC or CMLC.
7. Connect the J1 plug of the last faceplate cable to the CMCC and verify appropriate card LED behavior, as described in “Normal LED behavior upon installation” on page 59.

Figure 30 illustrates how the system looks after you have installed cards and interboard faceplate cable harnesses.

Figure 30: Example of card locations